REMARKS

A Final Office Action mailed March 11, 2004 has been reviewed and carefully considered. Claims 1-30 are pending in the application. Claims 1-30 were rejected.

In paragraph 2 on page 2 of the Office Action, claims 5 and 9 were objected to due to certain informalities.

Applicants respectfully traverse the objection to claims 5 and 9. However, Applicants have amended claims 5 and 9 in accordance with Examiner's suggestions. Applicants submit that the amendments to the claims do not narrow or change the scope of Applicants' application.

In paragraph 4 on page 3 of the Office Action, claims 1-3, 12-17, and 26-30 were rejected under § 102(b) over DeKoning et al. (U.S. Patent No. 5,588,110).

In paragraph 5 on page 5 of the Office Action, claims 1-6, 15-20, and 29-30 were rejected under § 102(e) over Skazinski et al. (U.S. Patent No. 6,574,709).

In paragraph 7 on page 7 of the Office Action, claims 7-11 and 21-25 were rejected under § 103(a) over DeKoning et al. in view of Skazinski et al. (U.S. Patent No. 6,247,099).

Applicants respectfully traverse the §§ 102(b), (e) and 103(a) rejections. Applicants respectfully assert that the requirements are not present and a *prima facie* rejection fails under 35 U.S.C. §§ 102(b), (e) and 103(a) because the Office Action fails to cite a reference or references that teach, disclose or suggest all the claim limitations of Applicants' application.

The instant application requires "selecting a mirror cache line in a second controller to copy data into; mirroring the data from a cache line in a first controller to the mirror cache line in the second controller; and sending a message from the first controller to the second controller informing the second controller of cache meta data associated with data in the mirror cache line." Once a cache line has been mirrored from a first controller to a second controller, the meta data associated with the cache line is sent to the second controller. The meta data is only sent after the cache line has been mirrored in the second controller.

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DeKoning et al., on the other hand, teaches transferring data between two devices that insures data recovery in the event of a fault. DeKoning includes disk array controllers 18 and 20. Each controller can operate in two modes, dual-active mode or passive active mode. In DeKoning, for the dual-active mode, controller 18 is assigned primary cache memory 34, found within controller 18, and controller 18 is assigned an alternate cache memory 42, found within controller 20.

In contrast to the claims in the instant application, DeKoning states "[c]ontroller 18 is responsible for managing the write request data that it mirrors into the alternate cache memory area 42," column 4, lines 36-39. Controller 18 in DeKoning is allocated alternate cache memory area 42 during the system configuration phase of start-up operations. *See* column 4, lines 40-43. DeKoning further states, "[i]t should be appreciated that the alternate cache memory area 42 is assigned the same corresponding memory addresses as assigned to the primary cache memory area 34" and thus simplifies "mirroring operations by avoiding the need for virtual memory mapping operations," column 4, lines 43-50.

DeKoning does not map information after a cache line has been mirrored. Instead, a mirrored cache line is already mapped and assigned the same memory address as the primary cache memory address. Therefore, DeKoning does not teach, disclose or suggest "sending a message from the first controller to the second controller informing the second controller of cache meta data associated with data in the mirror cache line" from the instant Application.

The claims of the instant Application also require "informing the second controller of cache meta data associated with data *in* the mirror cache line." Once data is in the mirror cache line, the associated meta data is sent to the second controller.

The Office Action erroneously asserts that recovery control blocks (RCBs) associated with each cache block of the primary cache area are the same as "meta data associated with data in the mirror cache line." DeKoning states at column 5, lines 59-64, RCBs "provide for the recovery of cache data in the event of a power failure, a controller take-over sequence, or in any other situation where data must be recovered, restored, rebuilt." Once a cache block is requested to be mirrored into an alternate cache memory

area, RCBs are *first* mirrored into an alternate controller recovery control block, *see* column 5, lines 53-54.

Thus, before a data cache line is mirrored into the alternate cache memory area, the RCB is mirrored. Therefore, DeKoning does not teach, disclose or suggest the instant Application's "informing the second controller of cache meta data associated with data *in* the mirror cache line," (emphasis added).

Skazinski ('709) fails to remedy the deficiencies of DeKoning. Rather, Skazinski teaches "providing cache data mirroring to a data storage system." According to Skazinski, a mirror data request is posted to the alternate controller by the first controller, the request including the first data and an address identifying where in the second semiconductor memory the alternate controller shall store the first data." Posting the mirror data request in Skazinski includes data and an address where the data will be stored.

The posting of an address in Skazinski is not the same as sending a message having cache meta data from the instant application. Rather, cache meta data includes a logical unit, a logical block, a dirty bit map and the cache identification. *See* page 14, line 13 of the specification. Therefore, Skazinski ('709) does not teach, disclose or suggest "sending a message from the first controller to the second controller informing the second controller of cache meta data associated with data *in* the mirror cache line."

Moreover, Skazinski does not teach, disclose or suggest "sending a message from the first controller to the second controller informing the second controller of cache meta data associated with data *in* the mirror cache line." Rather, according to Skazinski, the address provided in the mirror data request only identifies where the data *will be* stored, not where it is stored.

Skazinski ('099) fails to remedy the deficiencies of DeKoning and Skazinski ('709). Skazinski ('099) fails to teach disclose or suggest at least "sending a message from the first controller to the second controller informing the second controller of cache meta data associated with data in the mirror cache line." Rather, Skazinski ('099) focuses on a system and method for maintaining cache coherency and data synchronization in a computer system having multiple active controllers. Skazinski ('099) does not discuss or

mention mirroring data anywhere. In addition, Skazinski ('099) does not discuss or mention meta data anywhere. Therefore, Skazinski ('099) does not teach, disclose or suggest the elements of Applicants' claim that are deficient in DeKoning.

Further, with respect to the § 103 (a) rejection, the Office Action has not provided motivation for modifying the DeKoning reference. The Office Action merely makes broad conclusory statements regarding the use of the DeKoning reference with the Skazinski reference without providing evidence of motivation of why one skilled in the art would have been motivated to modify the DeKoning reference to arrive at the presently claimed invention. Furthermore, after review of the DeKoning reference, there is no suggestion or teaching for modifying the reference to achieve the claimed limitations.

The MPEP § 2106 indicates that evidence of the reasons one of ordinary skill in the art would have been motivated to select the references and combine them should be specifically identified and shown by some objective teaching in the prior art leading to the modification. In the present instance, the Office Action has neither indicated reasons why one skilled in the art would be motivated to modify the DeKoning reference, nor provided any evidence of factual teachings, suggestions or incentives from the prior art that lead to the modification. Therefore, Appellant submits that the Section 103(a) rejection is improper and should be removed.

Without complete correspondence to the claimed invention, the Section 102 rejections cannot stand and Applicant requests that the rejections be withdrawn. Therefore, Applicant respectfully submits that claims 1, 15, 29 and 30 are patentable over both DeKoning and Skazinski ('709). Because the combination of DeKoning and Skazinski ('099) fails to teach, disclose or suggest all the elements of at least the first claim, the Section 103 rejection is improper and should be withdrawn.

Dependent claims 2-14 and 16-28 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 1 and 15. Further dependent claims 2-14 and 16-28 recite additional novel elements and limitations. Applicant reserves the right to argue independently the patentability of these additional
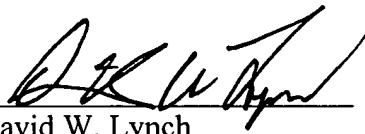
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novel aspects. Therefore, Applicant respectfully submits that dependent claims 2-14 and 16-28 are patentable over the cited references.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicants, David W. Lynch, at 651-686-6633 Ext. 116.

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Date: April 28, 2004   By: _____
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